

## ROADWAY LIGHTING GLOSSARY OF TERMS

**Ambient Light.** General brightness of roadway background.

**Average Initial Illuminance.** The average level of horizontal illuminance on the roadway pavement area at the time the lighting system is installed when lamps are new and luminaires are clean: expressed in average footcandles (or lux if SI) for the pavement area.

**Average Maintained Illuminance.** The average level of horizontal illuminance on the roadway pavement when the output of the lamp and luminaire is diminished by the maintenance factors; expressed in average footcandles (or lux if SI) for the pavement area.

**Candela (cd).** The unit of luminous intensity formerly termed “candle”. One candela equals one lumen per steradian (The steradian is the unit of measurement of a solid angle).

**Coefficient of Utilization (CU).** A design factor that represents the percentage of bare lamp lumens that are utilized to light the pavement surface. This factor is based on the luminaire position relative to the lighted area.

**Disability Glare.** Glare that reduces the ability to see or spot an object.

**Discomfort Glare.** An ocular discomfort that doesn't affect the visual acuity or ability to discern an object.

**Footcandle (fc).** The English unit of Illuminance; illuminance on a surface one square foot in area on which there is uniformly distributed flux of one lumen. One footcandle equals 10.76 lux.

**Glare.** The sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eye is adapted to cause annoyance, discomfort, or loss in visual performance and visibility.

**Illuminance (E).** The density of luminous flux incident on a surface; the quotient of the flux divided by the area of the surface when the surface is uniformly illuminated.

**Initial Lamp Lumens (LL).** Initial bare bulb lumen output of a light source.

**Lamp Loss Factor (LLF).** A design factor used to depreciate the output of a Luminaire due to life-cycle output reduction of the lamp and the accumulation of dirt. See Section 2.6.

**Light.** Radiant energy that is capable of being perceived by the eye and producing a visual sensation. The visible portion of the electromagnetic spectrum extends from approximately 380 to 770 nanometers.

**Lumen (lm).** A unit of measure of the quantity of light. One lumen is the amount of light that falls on an area of one square foot, every point of which is one foot from the source of one candela. A light source of one candela emits a total of 12.57 lumens.

**Luminaire.** A complete electrical unit consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.

**Luminaire Dirt Depreciation Factor (LDD).** A design factor used to depreciate the output of a lamp due to dirt affecting the interior and exterior of the luminaire and, to some extent, the lamp itself. Various degrees of dirt accumulation may be anticipated depending on the area in which the luminaire is located. See Section 2.6.

**Luminance (Photometric Brightness) (L).** The luminous intensity of any surface in a given direction per unit of projected area of the surface as viewed from that direction. The term *brightness* usually refers to the intensity of sensation resulting from viewing surfaces or spaces from which light comes to the eye. The unit of luminance,  $\text{cd}/\text{m}^2$ , is defined as the uniform luminance of a perfectly diffusing surface emitting or reflecting light at the rate of 1 lumen/ $\text{m}^2$ , or as the average luminance of any surface emitting or reflecting light at that rate. This is another accepted method of calculation for highway lighting design used by VDOT.

**Luminous Flux.** The time rate of flow of light. The density of luminous flux is expressed as Illuminance.

**Luminous Intensity.** The luminous flux per unit solid angle in a specified direction. A unit of luminous intensity is expressed in “Candela”.

**Lux (lx).** The SI unit of illuminance; defined as the amount of light on a surface of one square meter, all points of which are one meter from a uniform source of one candela. One lux equals 0.0929 footcandle.

**Minimum Maintained Illuminance Level.** The lowest *in-service* values of a lighting system designed with the proper light loss factor.

**Quality.** Quality of lighting refers to the relative ability of the light available to provide the contrast difference in the visual scene in such a manner that people may recognize the cues required for the seeing task.

**Sky Glow.** (Also known as Light Pollution.) Conditions where the night skies are illuminated when upwardly directed light reflect off particles in the atmosphere, such as moisture, dust, or smog.

**Spill Light.** (Also known as Light Trespass) Light that illuminates surfaces beyond the property line. For example, light on a bedroom wall coming through the window from the ball field across the street.

**Uniformity Ratio.** The ratio of the Average Maintained Illuminance level to the Minimum Maintained Illuminance level. The uniformity ratio is used as a design check to ensure lighting performance.

**Visibility.** The quality or state of an object being perceivable by the eye. In roadway lighting it is usually defined in terms of the distance at which an object can just be perceived